

STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION--DIVISION OF WATER QUALITY  
SEPTEMBER 4, 2007

**ITEM 10**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) TO ESTABLISH A TOTAL MAXIMUM DAILY LOAD (TMDL) AND IMPLEMENTATION PLAN FOR PATHOGENS IN THE SONOMA CREEK WATERSHED

**DISCUSSION**

The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted a proposed amendment to the Basin Plan to establish a TMDL, addressing pathogens in the Sonoma Creek Watershed. The TMDL defines allowable density-based bacteria concentrations and prohibits discharge of raw or inadequately treated human waste in the Sonoma Creek Watershed. The San Francisco Bay Water Board determined that the zero human waste discharge target is necessary because raw or inadequately treated human waste is a significant source of pathogenic organisms (including viruses), and attainment of fecal coliform targets alone may not be sufficient to protect human health. The staff report presents results of staff analysis of pathogen impairment and sources, recommended pathogen load allocations, and a plan to implement the allocations. If approved, the Basin Plan amendment will: (1) establish a pathogen TMDL in the Sonoma Creek watershed pursuant to section 303(d) of the Clean Water Act, and (2) establish an implementation strategy to achieve and support the TMDL. Approval of this item will revise Basin Plan Chapter 4 (implementation plan).

The San Francisco Bay Water Board has established water quality standards for Sonoma Creek and its tributaries. The water quality standards consist of: a) beneficial uses for the water body, b) water quality objectives to protect those beneficial uses, and c) the Antidegradation Policy, which requires the continued maintenance of existing water quality. Sonoma Creek is on the Clean Water Act 303(d) list because it does not meet standards due to elevated concentrations of pathogens, as well as sediment and nutrients. The primary beneficial uses of Sonoma Creek and its tributaries that are impaired by high levels of pathogens are water contact recreation (REC 1) and non-contact water recreation (REC 2). The purpose of this TMDL is to protect and restore these beneficial uses by reducing the levels of pathogens in this watershed. This plan builds upon previous, and ongoing, successful efforts to reduce pathogen loads in Sonoma Creek and its tributaries, and requires actions consistent with the California Water Code (CWC) section 13000 et seq; the state's Nonpoint Source Pollution Control Program Plan (CWC section 13369) and its Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program; and the human waste discharge prohibition (Basin Plan Discharge Prohibition 15).

**PROBLEM STATEMENT**

Waterborne pathogens pose a risk to human health. In ambient waters, the presence of human and animal fecal waste and associated pathogens leads to high concentrations of fecal coliform

and *E. coli* bacteria. Bacteria levels in Sonoma Creek and its tributaries are higher than the bacteria water quality objectives established to protect people who swim, wade, and fish in these waters. Consequently, humans who recreate in Sonoma Creek and its tributaries are at risk of contracting waterborne diseases.

Elevated levels of fecal coliform bacteria have been observed in Sonoma Creek and its tributaries since the 1970s. These bacteria indicate the presence of fecal contamination and health risk to recreational users of Sonoma Creek from waterborne pathogens. Source assessment studies indicate that the main sources of bacteria and associated pathogens include faulty On-Site Sewage Disposal Systems (OSDS), sanitary sewer system failures, municipal runoff, grazing lands, dairies, and wildlife. The Sonoma Valley County Sanitation District facility is the only permitted discharger of municipal wastewater to Sonoma Creek. The facility discharges to Sonoma Slough (influenced by tide) in the extreme southern end of the watershed during winter months. Self-monitoring reports from the facility indicate that the effluent does not significantly contribute to pathogen loading under normal conditions. However, due to the possibility of spills or malfunctions, the facility is considered a potential source of pathogens.

Placement on the Clean Water Act section 303(d) list requires that a plan (a TMDL) be developed to control the identified pollution and ensure that standards are met.

When developing a TMDL, a desired or target future condition must be established that provides a measurable environmental management goal and a clear threshold to use when linking the goal to attainment of the applicable water quality objectives. The numeric targets (desired future conditions for the Sonoma Creek Watershed) proposed for this TMDL are as follows:

- Geometric mean *E. coli* density less than 126 colony-forming units /100 milliliters (CFU/mL)
- 90th percentile *E. coli* density less than 409 CFU/100 mL
- Geometric mean fecal coliform density less than 200 CFU/100 mL
- 90th percentile fecal coliform density less than 400 CFU/100 mL
- Median total coliform density less than 240 CFU/100 mL
- No single total coliform sample to exceed 10,000 CFU/100 mL
- Zero discharge of untreated or inadequately treated human waste to the Sonoma Creek and its tributaries

The bacterial density targets are based on the U.S. Environmental Protection Agency's (U.S. EPA's) *E. coli* recommended criteria and on the Basin Plan's contact recreation water quality objectives for fecal coliform and total coliform bacteria. Federal bacterial criteria for *Escherichia coli* (*E. coli*) and Enterococci also apply. The numeric targets for Sonoma Creek watershed were selected to interpret the water quality standards and track the effectiveness of the TMDL. It should be noted, however, that the State Water Resources Control Board (State Water Board) is in the process of developing statewide bacterial water quality objectives based on U.S. EPA guidance. Should the State Water Board adopt new objectives, the existing fecal and total coliform water quality objectives currently in the Basin Plan will likely be replaced. The

fecal coliform and total coliform targets and allocations will no longer be effective if the State Water Board adopts new objectives.

The last target, zero discharge of untreated human waste, is based on the knowledge that fecal bacteria are imperfect indicators of human pathogens. Since direct monitoring of human pathogens is not feasible, and because human waste is the most serious source of these pathogens, a target to implement the discharge prohibition for raw or inadequately treated human waste is proposed. This target is consistent with the Basin Plan's region-wide prohibition against the discharge of raw or inadequately treated sewage.

## **IMPLEMENTATION PLAN**

This plan builds upon previous and ongoing successful efforts to reduce pathogen loads in Sonoma Creek and its tributaries.

The TMDL gives Sonoma County Permit and Resource Management Department until January 2008 to submit a plan and implementation schedule for evaluating OSDS performance, and for correcting deficiencies in OSDSs that are identified as potential dischargers to surface waters. Priority will be given to systems that place water quality at risk. The septic system owners will be responsible for compliance with applicable requirements of Sonoma County, San Francisco Bay Water Board, and State Water Board. Beginning January 2011 and biannually thereafter, Sonoma County will be required to provide documentation of progress that has been made toward implementing control measures.

It will be the responsibility of the Sonoma Valley County Sanitation District (SVCS D) to apply for coverage under the State Water Board's general waste discharge requirements for sanitary sewer systems (Order No. 2006-0003-DWQ), and to comply with the provisions of the waste discharge requirements. In addition to applying for coverage under the general waste discharge requirements, SVCS D will be required to comply with its applicable National Pollutant Discharge Elimination System (NPDES) permit. The SVCS D will be required to report progress of its inspections and evaluations of the sanitary sewer systems annually.

The State's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires that current and proposed nonpoint source discharges be regulated under waste discharge requirements, waivers of waste discharge requirements, Basin Plan prohibitions, or some combination of these tools. For grazing lands, ranchers, both landowners and lessees, must submit a Report of Waste Discharge to the San Francisco Bay Water Board by January 2010. The report must provide the following: (at a minimum) a description of the facility, identification of necessary site-specific management measures to reduce animal waste runoff, and an implementation schedule for identified management measures. In addition, ranchers and dairy facility owners will be required to comply with the applicable waste discharge requirements, waiver conditions, or prohibitions, and to report progress on implementation of management measures that reduce animal waste runoff. Completion and/or compliance dates will be determined and specified in the applicable individual waste discharge requirements or waiver conditions. However, the San Francisco Bay Water Board staff intends to work with stakeholders to develop conditions for a general waiver of waste discharge requirements for grazing lands by 2009.

The Sonoma County Water Agency, County of Sonoma, City of Sonoma, Sonoma Developmental Center, and any other designated entities will be required to comply with approved storm water management plans. In addition to complying with the storm water

management plans, these entities will need to update/amend the plans, as needed, to include specific measures designed to reduce the discharge of human and animal wastes. The approved storm water management plans and applicable NPDES permits will specify the dates for completion and/or compliance.

The numeric targets and load allocations in the TMDL are not directly enforceable. To demonstrate attainment of applicable allocations, responsible parties must demonstrate that they are in compliance with specified implementation measures and any applicable waste discharge requirements or waiver conditions.

The TMDL encourages, but does not require, watershed groups and stakeholder partnerships to coordinate, efforts toward achieving water quality objectives. In many cases, watershed groups may assist and participate in actions facilitating successful implementation of this TMDL, including developing appropriate management practices, conducting group or watershed-based monitoring, sharing technical knowledge, and obtaining funding. Watershed groups can assist individual dischargers in achieving compliance. However, as required by the state's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program, individual dischargers continue to bear the ultimate responsibility for complying with waste discharge requirements and orders.

Approximately every five years, the San Francisco Bay Water Board will review the Sonoma Creek Watershed Pathogen TMDL and evaluate new and relevant information from monitoring, special studies, and the scientific literature. If source control actions are fully implemented throughout the watershed and the TMDL targets are not met, the San Francisco Bay Water Board may consider whether the TMDL targets are attainable and re-evaluate or revise the TMDL and allocations as appropriate. Alternatively, if the required actions are not implemented or are only partially implemented, the San Francisco Bay Water Board may consider further regulatory or enforcement action.

#### **COST ESTIMATE: AGRICULTURAL WATER QUALITY CONTROL PROGRAM**

Cost estimates were projected for a ten-year planning horizon. The average annual program implementation cost to agricultural dischargers is estimated to range between \$35,000 to \$134,000 for the next ten years. These costs will be shared by Sonoma Creek watershed grazing lands operators (approximately ten operators). This estimate includes the cost of implementing animal waste controls and grazing management measures, and is based on costs associated with technical assistance and evaluation, installation of water troughs, and livestock control fencing along up to 25 percent of streams in grazing lands. Besides fencing, other acceptable methods of managing livestock access to streams are not included in this cost estimate due to variability in costs and site-specific applicability. In addition to private funding, potential sources of financing include federal and state water quality grants and federal agricultural grants.

#### **POLICY ISSUE**

Should the State Water Board approve the amendment to the Basin Plan to establish a TMDL and implementation plan for pathogens in the Sonoma Creek Watershed, as adopted under San Francisco Bay Water Board [Resolution No. R2-2006-0042](#)?

## **FISCAL IMPACT**

Funds for San Francisco Bay Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

## **REGIONAL WATER BOARD IMPACT**

Yes, approval of this resolution will affect the San Francisco Bay Water Board by amending the Basin Plan.

## **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan as adopted under San Francisco Bay Water Board [Resolution No. R2-2006-0042](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board [Resolution No. R2-2006-0042](#) to the Office of Administrative Law for approval of the regulatory provisions and to U.S. EPA for approval of the TMDL.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2007-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) TO ESTABLISH A TOTAL MAXIMUM DAILY LOAD (TMDL) AND IMPLEMENTATION PLAN FOR PATHOGENS IN THE SONOMA CREEK WATERSHED

### WHEREAS:

1. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted a revised Basin Plan on June 21, 1995, approved by the State Water Resources Control Board (State Water Board) on July 20, 1995, and approved by the Office of Administrative Law (OAL) on November 13, 1995, and has since been revised.
2. On June 14, 2006, the San Francisco Bay Water Board adopted [Resolution No. R2-2006-0042 \(Attachment\)](#), amending the Basin Plan to establish a pathogen TMDL for the Sonoma Creek Watershed.
3. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Boards may revise Basin Plans, and section 13242, which requires a program of implementation of water quality objectives. The State Water Board also finds that the TMDL as reflected in the Basin Plan amendment is consistent with the requirements of federal Clean Water Act section 303(d).
4. The San Francisco Bay Water Board found that in the TMDL staff report, supporting documentation, the California Environmental Quality Act (CEQA) Checklist, and the response to comments contained analysis that comply with the requirements of the State Water Board's certified regulatory CEQA process as set forth in California Code of Regulations, Title 23, section 3775, et seq.
5. The San Francisco Bay Water Board has duly considered the Environmental Checklist, Staff Report, and supporting documentation with respect to environmental impacts and found that the Basin Plan amendment will not have a significant impact on the environment. Therefore, no alternatives or mitigation measures are required or proposed. The San Francisco Bay Water Board found that the Basin Plan amendment will result in no potential for adverse effects on wildlife. The San Francisco Bay Water Board has also considered the environmental analysis contained in the Staff Report of the reasonably foreseeable methods of compliance with the Basin Plan amendment, including economics.
6. The San Francisco Bay Water Board found that the Basin Plan amendment will ensure the reasonable protection of the beneficial uses of surface waters within the Region, and is consistent with the state Antidegradation Policy (State Water Board Resolution No. 68-16) and federal antidegradation requirements.
7. This Basin Plan amendment does not become effective until approved by the State Water Board and OAL. The TMDL must also be approved by the U.S. Environmental Protection Agency (U.S. EPA).

# DRAFT

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan as adopted under San Francisco Bay Water Board [Resolution No. R2-2006-0042](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board [Resolution No. R2-2006-0042](#) to OAL for approval of the regulatory provisions and to U.S. EPA for approval of the TMDL.

## CERTIFICATION

The undersigned, Acting Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on September 4, 2007

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Jeanine Townsend  
Acting Clerk to the Board